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APPLICANT(S): GINSBURG, Eyal et al.  
SERIAL NO.: 10/813,026  
FILED: March 31, 2004

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REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims are respectfully requested.

Status of Claims

Claims 1-9, 11-14, 16, and 18-21 are pending in the application. Claims 22-29 have previously been withdrawn.

Claims 1, 14, 16 and 18 have been amended.

Claims 10, 15 and 17 have been canceled without prejudice or disclaimer. In making this cancellation without prejudice, Applicants reserve all rights in these claims to file divisional and/or continuation patent applications.

Applicants respectfully assert that the amendments to the claims add no new matter.

Remarks to the Title

In the Office Action the Examiner objected to the Title as not being descriptive.

Applicants have replaced the Title with the Title: -- ELECTRO MECHANICAL DEVICE HAVING A SEALED CAVITY --, in accordance with the Examiner's suggestion. Accordingly, Applicants respectfully request the objection to the Title be withdrawn.

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## CLAIM REJECTIONS

## 35 U.S.C. § 112 Rejections

In the Office Action, the Examiner rejected claims 15-19 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner contended that claim 15 is unclear as to what structures are attached to the first and second sides of the cap layer.

Applicants respectfully assert that in view of the cancellation of claim 15, and the amendments to claims 16-19, the rejection of claims 15-19 under 35 U.S.C. § 112, second paragraph, is now moot.

## 35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 14, 20 and 21 under 35 U.S.C. § 102(b), as being anticipated by the article "A Sealed Cavity TFR Process for RF Bandpass Filters" by Lutsky et al. Specifically, the Examiner contended that Lutsky et al. discloses a MEMS device being a FBAR, the device including a membrane comprises of a piezoelectric material that is Aluminum Nitride, wherein the membrane is attached to a support structure being a Silicone support substrate.

The Examiner rejected claims 1, 2, 4-9, 12-16 and 18-21 under 35 U.S.C. § 102(b), as being anticipated by Mang et al. (US 5,692,279). Specifically, the Examiner contended that Mang et al. discloses a MEMS device that is a FBAR, the device including a base structure, and a cap layer attached to a top surface of the base structure and able to support one or more elements of a MEMS device, one or more cavities encapsulated between the base structure and the cap layer are sealed from an external environment. The Examiner also contended that Mang describes the cap layer being Silicon Dioxide, which is inherently "selectively permeable".

The Examiner rejected claims 1-3, 5-7, 12-16, 20 and 21 under 35 U.S.C. § 102(a) and 102(e), as being anticipated by Aigner (US 6,657,363). Specifically, the Examiner

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contended that Aigner describes the sealed cavity is formed between a cap layer and a base structure comprising protrusions of insulating material.

As is well established, in order to successfully assert a *prima facie* case of anticipation, the Examiner must provide a single prior art document that teaches every element and limitation of the claim or claims being rejected.

Each of amended independent claims 1 and 14 recites, in paraphrase, a base structure and a cap layer attached to the base structure and able to support one or more elements of an electro-mechanical device, wherein one or more sealed cavities between the base structure and cap layer are sealed from an external environment, and wherein the cap layer comprises piezoelectric material (emphasis added). It is respectfully asserted that none of Lutsky et al., Mang et al. and Aigner teaches or fairly suggests at least these features of the claimed invention.

Thus, it is respectfully requested that the rejections of independent claims 1 and 14 under 35 U.S.C. 102§(b) be withdrawn.

Furthermore, it is respectfully submitted that independent claims 1 and 14 are patentable, and thus allowable, over the prior art references on record and any combination thereof. In this regard, it is noted that the distinguishing features of independent claims 1 and 14, as discussed above, would not have been obvious at the time the invention was made to a person skilled in the art, in view of Lutsky et al., Mang et al. and/or Aigner, alone or in combination with the prior art references on record, including the Ella reference (US 6,081,171), as discussed below with reference to claims 10, 11, and 17. Specifically, as discussed below, Applicants respectfully traverse the Examiner's contention that it would have been obvious in view of Ella to modify Mang et al. to include piezoelectric material instead of Silicon Dioxide layer 15 (Fig. 4 of Mang Et al.).

In the portions of Ella cited by the Examiner, Ella merely describes a BAW device including a membrane 28 having a top layer 30 and a bottom layer 32 (Column 17, lines 26-28). Ella further describes the top layer of the membrane is comprised of Silicon, Silicon-Dioxide, Poly-Silicon, or Aluminum Nitride; and the bottom layer is comprised of Silicon, Silicon-Dioxide, or Gallium Arsenide (Column 17, lines 29-33). Therefore, Ella merely describes that the top layer of a "two-layer" membrane may comprise either one of Silicon,

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Silicon-Dioxide, Poly-Silicon, or Aluminum Nitride. However, it is respectfully asserted that Ella does not disclose, teach or fairly suggest that a cap layer supporting a membrane includes Aluminum Nitride, as recited by amended claims 1 and 14 of the present Application.

Claims 2-9 depend, directly or indirectly, from independent claim 1 and incorporate all the elements of this claim. Claims 16 and 18-21 depend, directly or indirectly, from independent claim 14 and incorporate all the elements of this claim. Therefore, it is respectfully submitted that claims 2-9, 16 and 18-21 are patentable, and thus allowable, at least for the reasons set forth above.

### 35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 10, 11 and 17 under 35 U.S.C. § 103(a), as being unpatentable over Mang et al. (US 5,692,279) in view of Ella (US 6,081,171).

Claim 11 depends directly from independent claim 1 and incorporates all the elements of this claim. Therefore, it is respectfully submitted that claim 11 is patentable, and thus allowable, at least for the reasons set forth above.

In view of the cancellation of claims 10 and 17, and without conceding the appropriateness of this rejection, Applicants respectfully submit that the rejection of claims 10 and 17 under 35 USC §103(a) is now moot.

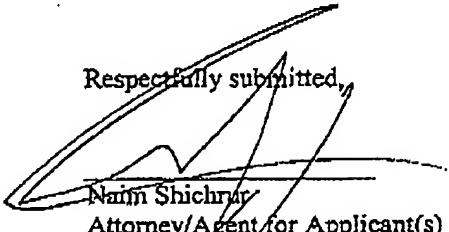
In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

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Dated: September 3, 2006

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